MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

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# MULTIMEDIA UNIVERSITY

# FINAL EXAMINATION

**TRIMESTER 1, 2017/ 2018**

## BTQ3094 TQM FOR MANAGERS

(All sections / Groups)

11 OCTOBER 2017
9.00 a.m to 11.00 a.m
(2 Hours)

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**INSTRUCTIONS TO STUDENT**

1. This Question paper consists of 3 pages, excluding the cover page.
2. Answer **ANY FIVE OUT OF SIX** questions. All questions carry equal marks.
3. Answers should be written in the Answer Booklet provided.
4. The students are allowed to use non-programmable calculator

**Answer ANY FIVE questions. All questions carry equal marks.**
**(5 x 20 = 100 marks)**

## Question 1

a. How can an understanding of the multiple dimensions of quality lead to improved product and service designs?
(10 marks)

b. Prof.Deming believed poor quality was not the fault of workers, but resulted from poor management of the system for quality improvement. Do you agree with Deming? Why or why not?
(10 marks)

## Question 2

a. Do you think that if line employees are empowered, given authority and required to work on quality improvement activities, their productivity will suffer?
(10 marks)

b. Discuss the concept of prevention cost. Why is prevention cost such a pervasive consideration in quality programs?
(10 marks)

## Question 3

a. Describe some of the potential pitfalls of customer-driven quality. Can you think of any ways to avoid or lessen the impact of these pitfalls?
(10 marks)

b. Many scholars believe that the business process benchmarking is the most important type of benchmarking. Do you agree with this particular belief? Why or why not?
(10 marks)

## Question 4

a. Why do you believe that quality technique in the service industry are less mature than quality techniques for manufactured products? What can be done to bring quality techniques for the service industry up to a higher level?
(10 marks)

**Continued..**

b. Case study

**Keeping Apple's iPhone Competitive**

The past several years have seen an increase in smartphone ownership by cell phone users. In its infancy, the smart phone was produced by only a few companies, such as RIM's Blackberry and Motorola. However the market is now crowed. Still Apple's introduction of the iPhone changed the industry. The purpose of a smartphone has shifted from e-mail and business to apps and functionality.

The cell phone industry must be in tune with the customer. Apple attempts to incorporate popular features in its designs. The iPhone includes the Apple staples of app capability and interfacing with other Apple products. The iPhone is operated using a touchscreen and plays music and video. Like other smartphones, the iPhone can manage e-mail accounts and thousands of apps.

With a new generation introduction, customers expect improvements to the features including front and back cameras for video conferences. Including dual cameras in the design required Apple to create new software for video conferencing. Camera quality in phones is improving as people rely on them more than handhelds. Knowing that quality is important to some customers, a reviewer of the iPhone commented, "It isn't the best cellphone camera I've tested, but it is a big improvement". This is an example of the trade-offs that may occur in product design. With so many features to incorporate, it may not be possible for a company to have the best for each. A company must decide which areas to focus on in the design.

The iPhone has addressed other areas of cellphone design. Apple claims that the iPhone is the world's thinnest smartphone and sports the world's highest-resolution smartphone screen. Battery life is a concern for all cellphone designs and Apple has increased talk-time battery life. New multitasking software manage apps to reduce battery drain.

The iPhone incorporates some features over which Apple has limited control. Facebook, Twitter and Pandora are popular apps among customers. Incorporating these features requires limiting battery consumption, but allows for frequent updates. Some users want to be constantly connected to their social networks. Apple's multitasking feature addresses some of these issues but may still disappoint some users.

i. How should Apple evaluate the quality of its iPhone?

(5 marks)

ii. The case discusses the issues of trade-offs in design. What are some smartphone trade-offs? Why are these important to consider in design?

(5 marks)

**Continued..**

## Question 5

a. A glass sheet manufacturer produces standard 6mm thickness panes for double glazing windows. Following are the thickness dimensions taken from samples during the production process.

| Sample | $X_1$ | $X_2$ | $X_3$ | $X_4$ | $X_5$ |
|---|---|---|---|---|---|
| 1 | 6.45 | 6.12 | 6.03 | 5.89 | 5.92 |
| 2 | 5.76 | 6.23 | 6.05 | 6.32 | 5.89 |
| 3 | 6.11 | 6.15 | 5.93 | 6.21 | 5.96 |
| 4 | 5.74 | 6.03 | 6.02 | 6.20 | 6.04 |
| 5 | 6.35 | 6.07 | 5.88 | 5.93 | 6.06 |

Use x-bar and R-charts to determine if the process is in control. ($A_2$= 0.58, $D_3$=0, $D_4$=2.11)

(15 marks)

b. For an overhead projector, the thickness of a component is specified to be between 30 and 40 millimetres. Thirty samples of components yielded a grand mean of 34 mm with a standard deviation of 3.5. Calculate the process capability index and evaluate the process capability.

(5 marks)

## Question 6

a. What is the difference between routine work and knowledge work? Provide examples of each type of work.

(10 marks)

b. What are the organisational benefits of conducting quality audits? Explain your answer.

(10 marks)

**END OF PAPER**